

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
26 August 2004 (26.08.2004)

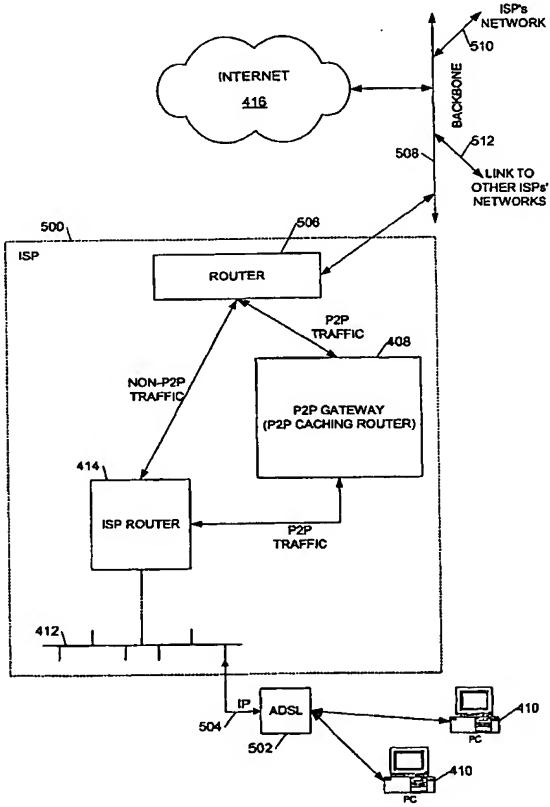
PCT

(10) International Publication Number
WO 2004/073281 A3

- (51) International Patent Classification⁷: H04L 29/08, 12/56
- (21) International Application Number: PCT/GB2004/000213
- (22) International Filing Date: 19 January 2004 (19.01.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 0303192.9 12 February 2003 (12.02.2003) GB
- (71) Applicant (*for all designated States except US*): SAVISO GROUP LTD [GB/GB]; St John's Innovation Centre, Cowley Road, Cambridge, Cambridgeshire, CB4 0WS (GB).
- (72) Inventor; and
- (75) Inventor/Applicant (*for US only*): TWISS, Adam [GB/GB]; 64 Hartington Grove, Cambridge, Cambridgeshire (GB).
- (74) Agent: MARTIN, Philip, John; Marks & Clerk, 66-68 Hills Road, Cambridge CB2 1LA (GB).
- (81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: METHODS AND APPARATUS FOR TRAFFIC MANAGEMENT IN PEER-TO-PEER NETWORKS



(57) Abstract: This relates to routing and caching systems for reducing the bandwidth used by decentralised peer-to-peer (P2P) file sharing networks. A method of reducing traffic in a decentralised peer-to-peer network is described. The peer-to-peer network operates over an underlying network comprising first and second network portions. The method comprises routing a peer-to-peer message in one of said network portions with an intended destination in the other of said network portions to a gateway between peer-to-peer nodes residing on said first and second network portions; and controlling transport of said message at said gateway to limit propagation of said message into said other of said network portions.

**Published:**

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(88) Date of publication of the international search report:

21 October 2004

INTERNATIONAL SEARCH REPORT

Inte

Application No

PCT/GB2004/000213

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 H04L29/08 H04L12/56

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>ORAM ANDY (ED): "Peer-to-peer: Harnessing the Benefits of a Disruptive Technology passage" PEER-TO-PEER: HARNESSING THE BENEFITS OF A DISRUPTIVE TECHNOLOGY, XX, XX, 15 March 2001 (2001-03-15), pages 94-122, XP002259974 the whole document</p> <p>-----</p> <p>-/-</p>	1-5, 13-22, 30-38, 42,47-53

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority, claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

4 June 2004

Date of mailing of the international search report

18.08.04

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl.
 Fax: (+31-70) 340-3016

Authorized officer

Bertolissi, E

INTERNATIONAL SEARCH REPORT

Interinal Application No
PCT/GB2004/000213

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>ANN HARRISON: "Packeteer: Another take on Limiting P2P traffic". NETWORK WORLD PEER-TO-PEER NEWSLETTER, [Online] 3 April 2002 (2002-04-03), XP002282740</p> <p>Retrieved from the Internet: URL:http://www.nwfusion.com/newsletters/fileshare/2002/01297785.html> [retrieved on 2004-05-28] the whole document</p> <p>-----</p> <p>US 2002/147810 A1 (ABDELAZIZ MOHAMED M ET AL) 10 October 2002 (2002-10-10)</p> <p>abstract paragraph [0404] - paragraph [0416]</p> <p>-----</p> <p>US 2003/009586 A1 (HARROW IVAN P ET AL) 9 January 2003 (2003-01-09)</p> <p>abstract paragraph [0033] - paragraph [0038]</p> <p>-----</p> <p>GISIK KWON AND KYUNG DONG RYU: "Efficient Peer-to-Peer File Sharing Exploiting Hierarchy and Asymmetry", IEEE/IPSJ SYMPOSIUM ON APPLICATIONS AND INTERNET (SAINT), [Online], 27 January 2003 (2003-01-27), - 31 January 2003 (2003-01-31) XP002282741</p> <p>Orlando, Florida</p> <p>Retrieved from the Internet: URL:http://www.public.asu.edu/~kryul/papers/PASS-SAINT03.pdf> [retrieved on 2004-06-01]</p> <p>Abstract 2. PASS architecture</p> <p>-----</p>	1-5, 13-22, 30-38, 42,47-53
A		1-5, 13-22, 30-38, 42,47-53
A		1-5, 13-22, 30-38, 42,47-53

INTERNATIONAL SEARCH REPORT

International Application No. PCT/ GB2004/ 000213

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-5, 13-22, 30-38, 42, 47-53

A method, computer network message controller, gateway and carrier to limit propagation of peer-to-peer messages in other network portions.

2. claims: 6-8, 23-25, 39-41, 54-66

A peer-to-peer network cache, carrier, method and computer program comprising a data store storing data files.

3. claims: 9-12 , 26-29, 43-46, 67-74

A peer-to-peer network cache, carrier, method comprising a data store storing digital fingerprint data for identifying the files and corresponding file source identifiers

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2004/000213

Box II Observations where certain claims were found unsearchable (Continuation of Item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of Item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-5, 13-22, 30-38, 42, 47-53

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
 No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No.
PCT/GB2004/000213

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
US 2002147810	A1 10-10-2002	US 2002156893 A1		24-10-2002
		US 2003041141 A1		27-02-2003
		EP 1229442 A2		07-08-2002
		EP 1229443 A2		07-08-2002
		WO 02057917 A2		25-07-2002
		US 2002143944 A1		03-10-2002
		US 2002143855 A1		03-10-2002
		US 2002184310 A1		05-12-2002
		US 2002184357 A1		05-12-2002
		US 2002184311 A1		05-12-2002
		US 2003002521 A1		02-01-2003
		US 2002152299 A1		17-10-2002
		US 2002184358 A1		05-12-2002
		US 2002188657 A1		12-12-2002
		US 200214771 A1		10-10-2002
		EP 1282289 A2		05-02-2003
		US 2003028585 A1		06-02-2003
		US 2003070070 A1		10-04-2003
		US 2003055894 A1		20-03-2003
		US 2003055898 A1		20-03-2003
<hr/>				
US 2003009586	A1 09-01-2003	EP 1415456 A2		06-05-2004
		WO 03005640 A2		16-01-2003
		EP 1415455 A2		06-05-2004
		EP 1410261 A2		21-04-2004
		WO 03005244 A2		16-01-2003
		WO 03005246 A2		16-01-2003
		US 2003018712 A1		23-01-2003
		US 2003009518 A1		09-01-2003
		US 2003009587 A1		09-01-2003
		US 2003074403 A1		17-04-2003
<hr/>				